

## Two New Species of *Agrilus* (Coleoptera, Buprestidae, Agrilinae) from Okinawa-jima, Japan

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**Abstract** Two new species of the buprestid genus *Agrilus*, *A. inadai* and *A. motobuanus*, are described based on material collected from *Acer oblongum* WALL. *itoanum* (HAYATA) HATSUSHIMA on the island of Okinawa-jima, Nansei-shotô, Japan. *Agrilus inadai* is similar to *A. sospes* LEWIS, known from mainlands of Japan, but is distinguished from it by the shorter prehumeral keel on the pronotum, and the elytra more rufescent. *Agrilus motobuanus* is closely similar to *A. priamus* KERREMANS and *A. obscurecinctus* OBENBERGER, both known from Taiwan, but distinguished from them by the vertex metallic green and prosternal process wide, parameres wider.

Ninety-three species of the genus *Agrilus* CURTIS, 1825 have been known in Japan, and 13 species of them, are recorded from the island of Okinawa-jima, Nansei-shotô. However, the buprestid fauna of the Okinawa-jima has not been satisfactorily clarified as yet. Indeed, a new species, *Agrilus sekii*, was recently discovered from Okinawa-jima and its adjacent islands (OHMOMO, 2004), and this suggested need of further investigation in the island.

From May to June of 2003, I made a collecting trip to Okinawa-jima and took three *Agrilus* species, theretofore unknown from Japan. In 2004, I had an opportunity to study additional material of these species in cooperation with Mr. Satoshi INADA. After examination of the material, two species of them were found to be new to science. They will be described herein.

In the present paper, the median lobe of the male genitalia was observed in detail for the first time in the taxonomy of *Agrilus*. It was found to be very useful for distinguishing species of the genus. Median lobe was pulled out from parameres, and was mounted in Euparal on a small piece of glass (MARUYAMA, 2004).

The holotypes of the new species are deposited in the National Science Museum, Tokyo (NSMT), and some paratypes are housed in the collections of Hirokazu FUKUTOMI, Mr. S. INADA and Dr. Sadahiro OHMOMO.

All measurements in the text are given in millimetres, and the following abbreviations are used for measurements: BL – body length; BW – body width; EL – elytral length; EW – elytral width; L – length; PL – pronotal length; PW – pronotal width; W – width.

The following abbreviations are also used in descriptions and figure captions;

DV – dorsal view; FV – frontal view; LV – lateral view; PDV – postero-dorsal view; VV – ventral view.

*Agrilus inadai* FUKUTOMI, sp. nov.

(Figs. 1, 3–9)

*Type material.* Holotype: 1 ♂, Oppa-dake, Tamashiro, Nakijin-son, Okinawa-ken, 12–V–2004, S. INADA leg. Paratypes: 1 ♂, 2 ♀♀, same data as holotype; 1 ♀, same data but 29–IV–2004; 1 ♂, same data but 2–VI–2003, H. FUKUTOMI leg.

*Etymology.* Dedicated to Mr. S. INADA, a collector of the type series, for his co-operation in this study.

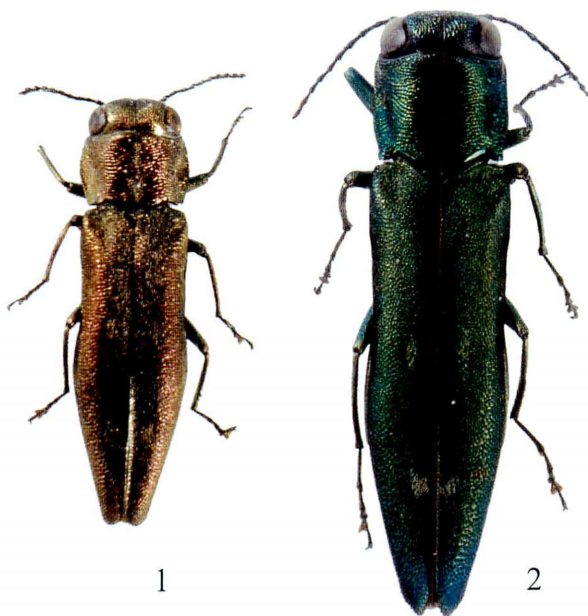
*Diagnosis.* Among the East Asian species, this new species is closely similar to *Agrilus sospes* LEWIS, 1893 in the mode of submarginal carinae and in the pattern of elytral maculations, but is distinguished from it by the brighter colour, the shorter pre-humerus, and the longer and narrower parameres. This species is easily distinguished from other congeners distributed in the Nansei-shotô by the body colour and the pattern of the elytral maculations.

*Description.* Male. Body (Fig. 1) elongate. Colour:—pronotum and elytra metallic reddish brown, with silky lustre; frons and anterior part of vertex metallic yellowish green. Lower part of frons with white recumbent pubescence at pronotal side. Prosternum and prosternal process with white recumbent pubescence. Elytra uniformly covered with short, whitish and recumbent pubescence, except for two pairs of white maculations with suberect pubescence; posterior white maculation larger than the anterior one; dark brown between anterior and posterior maculations.

Frons in lower part densely and rugosely punctate, deeply, subtriangularly impressed (FV); surface of impression smooth and with short medial longitudinal carina. Upper part of frons and vertex sparsely punctate, divided by a deep medial sulcus into two hemispheres (DV, PDV). Eyes small, convex (DV); lower part extending below upper side of antennal sockets. Vertex 2.0 times as wide as width of eye (DV); clypeus flat; antennae long and slender, overreaching pronotal length.

Pronotum (Fig. 3) transverse ( $L/W=0.67$ ), widest at middle; narrowed posteriad (DV). Basal pronotal angles sharp; anteromedial lobe absent; anterior angles sharply projecting anteriad. Disc transversely rugose; medial sulcus obvious; lateral impressions moderate in depth; prehumeral short, about 1/10 as long as pronotal length. Marginal and submarginal carinae convergent around posterior 1/3 (LV). Scutellum ( $L/W=0.45$ ) obsolete, without transverse carina. Prosternal process (Fig. 4) almost flat, triangular, subparallel-sided in anterior half, acutely pointed at apex. Elytra moderate in length ( $L/W=2.82$ ), somewhat extending beyond abdominal apex (VV); humeral pits deep; apices (Fig. 5) regularly, separately rounded, with serrulate margins. Metatarsi much shorter than metatibia; tarsal claws bifid, inner tooth obviously shorter than outer one.

Pygidium (Fig. 6) grooved along lateral margins, uniformly covered with minute



Figs. 1–2. *Agrilus* spp. — 1, *A. inadai* FUKUTOMI, sp. nov., holotype; 2, *A. motobuanus* FUKUTOMI, sp. nov., holotype.

setae. Eighth sternite (Fig. 7) rounded at apex, with marginal groove. Median lobe (Fig. 8) subparallel-sided, with a small projection at apex. Parameres (Fig. 9) subparallel-sided; apical emargination about 1/7 as long as parameral length, with a small projection medially.

Female. Head of the same colour as pronotum.

*Measurements.* BL 5.2–7.1 ( $5.8 \pm 0.7$ ); BW 1.4–2.0 ( $1.6 \pm 0.2$ ); PL 0.9–1.3 ( $1.1 \pm 0.1$ ); PW 1.4–2.0 ( $1.6 \pm 0.2$ ); PL/PW 0.58–0.71 ( $0.65 \pm 0.04$ ); EL 4.1–5.7 ( $4.7 \pm 0.6$ ); EW 1.5–1.9 ( $1.6 \pm 0.2$ ); EL/EW 5.18–7.12 ( $5.81 \pm 0.69$ ).

Holotype: BL 5.2; BW 1.5; PL 1.0; PW 1.5; EL 4.1; EW 1.5.

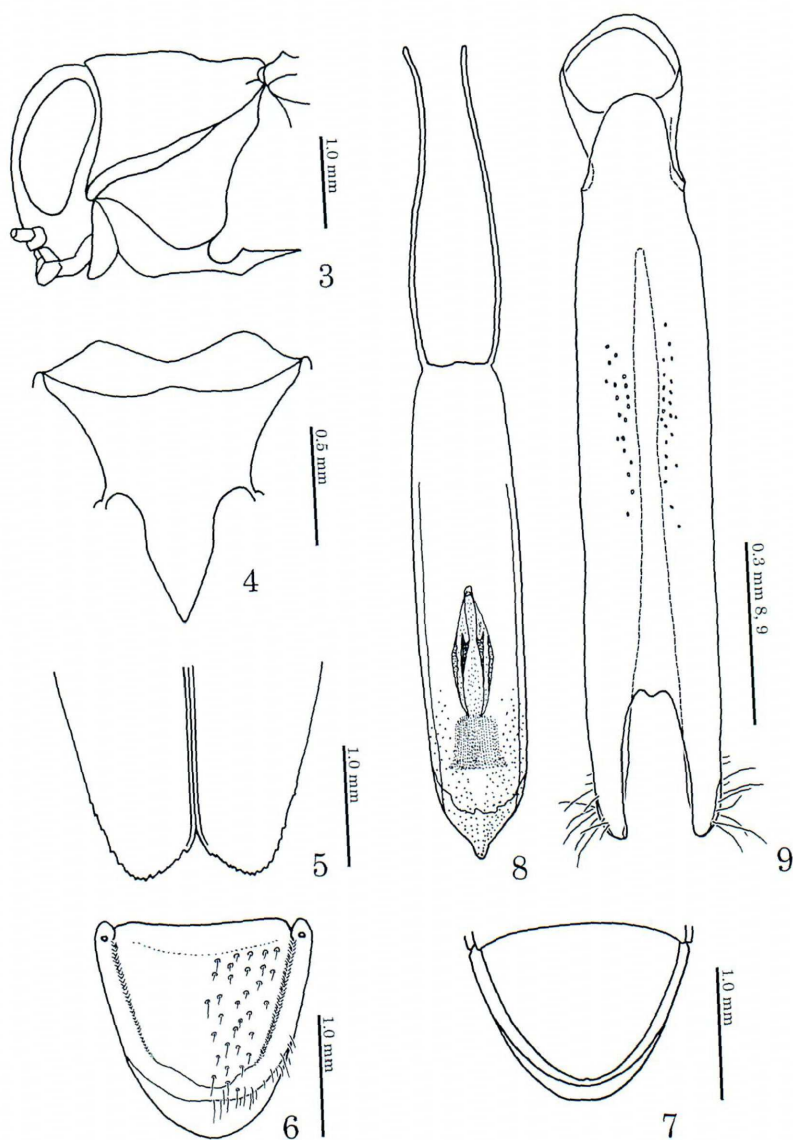
*Bionomics.* Adult beetles were collected from the end of April to the beginning of June by canopy sweeping of flying moth tree *Acer oblongum* WALL. *itoanum* (HAYATA) HATSUSHIMA of 4–6 m in height. This plant species is most probably an adult host plant of *Agrilus inadai*, but larval host plant has not been clarified. *Acer oblongum* is restricted to limestone areas in the Nansei-shotô of Japan, and the distribution of *Ag. inadai* may possibly be also confined to the range of *Ac. oblongum*.

*Agrilus motobuanus* FUKUTOMI, sp. nov.

(Figs. 2, 10–16)

*Type material.* Holotype: 1♂, Oppa-dake, Tamashiro, Nakijin-son, Okinawa-

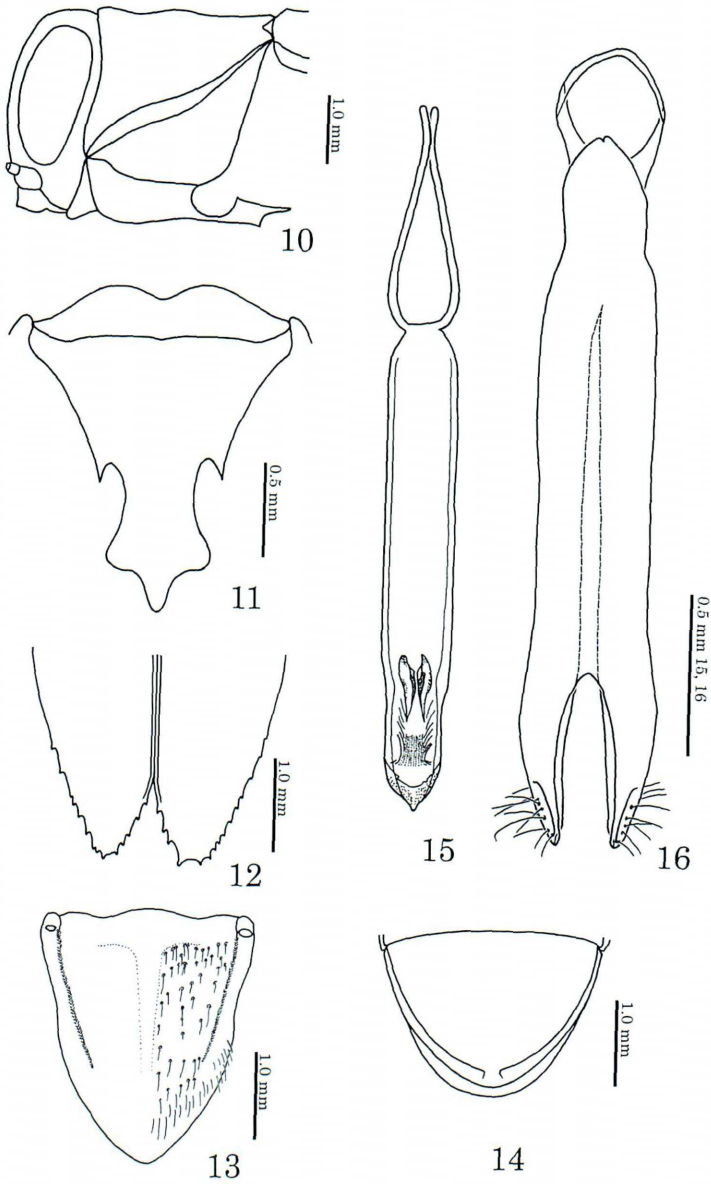




Figs. 3–9. *Agrilus inadae* FUKUTOMI, sp. nov. — 3, Frons and pronotum (LV); 4, prosternal process (VV); 5, elytral apices (DV); 6, pygidium (DV); 7, eighth sternite (VV); 8, median lobe of male genitalia (DV); 9, parameres of male genitalia (DV). All figures are based on the holotype.

ken, 12–V–2004, S. INADA leg. Paratypes: 3 ♀♀, same data as holotype; 1 ♀, same data but 25–V–2005; 1 ♂, same data but 6–VI–2004; 1 ♀, same data but 2–VI–2003, H. FUKUTOMI leg.

*Diagnosis.* Among the East Asian species, this species is closely similar to *Agrilus priamus* KERREMANS, 1912 and *A. obscurecinctus* OBENBERGER, 1935 in the



Figs. 10–16. *Agrilus motobuanus* FUKUTOMI, sp. nov. — 10, Frons and pronotum (LV); 11, prosternal process (VV); 12, elytral apices (DV); 13, pygidium (DV); 14, eighth sternite (VV); 15, median lobe of male genitalia (DV); 16, parameres of male genitalia (DV). All figures are based on the holotype.

absence of prehumeral keel on pronotum and in the pattern of elytral maculation, but is distinguished from them by the metallic green vertex, the presence of the metallic black area in the medial area of the pronotum, the narrower elytral suture, and the wider parameres. This species is easily distinguished from the other species distributed in the Nansei-shotô by the body colour and the pattern of elytral maculations.

*Description.* Male. Body elongate. Colour:—pronotum and elytra metallic green with silky lustre, but the median area of pronotum and elytral suture are metallic black; frons and anterior part of vertex metallic yellowish green. Prosternum and prosternal process with white recumbent pubescence. Elytra uniformly covered with short, whitish and recumbent pubescence, and with two pairs of maculations at middle and posteriorly.

Frons in lower part densely rugosely punctate, subtriangularly impressed (FV); impression with smooth surface and short medial carina. Upper part of frons and vertex sparsely punctate, divided by medial sulcus (DV, PDV). Eyes small, convex (DV), lower part extending below upper side of antennal sockets. Vertex 1.5 times as wide as width of eye (DV); clypeus flat; antennae long and slender, overreaching pronotal length.

Pronotum (Fig. 10) transverse ( $L/W=0.83$ ), widest at middle; narrowed posteriad (DV). Basal pronotal angles sharp; anteromedial lobe absent; anterior angles sharply projecting forwards. Disc transversely rugose; medial sulcus obvious; lateral impressions moderate in depth; prehumeral absent. Marginal and submarginal carinae convergent anteriorly (LV). Scutellum ( $L/W=0.67$ ) obsolete, without transverse carina.

Prosternal process (Fig. 11) trilobed, largely excavated mesally; lateral lobes rounded; medial lobe obtuse at apex.

Elytra moderate in length ( $L/W=3.1$ ), somewhat extending beyond abdominal apex (VV); humeral pits very deep; apices (Fig. 12) regularly and separately rounded, with finely dentate margins.

Metatarsi much shorter than metatibiae; tarsal claws bifid, inner tooth obviously shorter than outer one.

Pygidium (Fig. 13) grooved along lateral margins, irregularly covered with minute setae, but without setae medially. Eighth sternite (Fig. 14) rounded at apex, with marginal groove separated postero-medially.

Median lobe (Fig. 15) subparallel-sided, narrowed from apical 1/4 toward apex, with a small projection at apex. Parameres (Fig. 16) subparallel-sided; apical emargination about 1/10 as long as parameral length, with a small projection medially, widened around apical 1/5.

Female. Fifth sternite depressed postero-medially.

*Measurements.* BL 7.5–8.8 ( $8.1\pm0.5$ ); BW 1.8–2.2 ( $2.0\pm0.1$ ); PL 1.5–1.7 ( $1.6\pm0.1$ ); PW 1.8–2.1 ( $2.0\pm0.1$ ); PL/PW 0.75–0.85 ( $0.81\pm0.04$ ); EL 5.8–6.8 ( $6.3\pm0.4$ ); EW 1.9–2.2 ( $2.0\pm0.1$ ); EL/EW 7.53–8.82 ( $8.14\pm0.51$ ).

Holotype: BL 7.5; BW 1.9; PL 1.5; PW 1.8; EL 5.8; EW 1.9.

*Bionomics.* Adults were collected together with *Agrilus inadai*.



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### 要 約

福富宏和：沖縄島から発見されたナガタムシ属の2新種。—— 沖縄県今帰仁村玉城乙羽岳よりナガタムシ属の2新種, *Agrilus inadae* sp. nov. オキナワシロテンナガタムシ（新称）と *A. motobuanus* sp. nov. オキナワミドリナガタムシ（新称）を記載した。オキナワシロテンナガタムシは、北海道・本州・四国・九州より記録がある *A. sospes* LEWIS, 1893 シロテンナガタムシに似ているが、体色が明るい赤褐色であること、内側隆線がより短いことなどで区別される。オキナワミドリナガタムシは、台湾より記載された *A. priamus* KERREMANS, 1912 ミドリナガタムシと *A. obscurecinctus* OBENBERGER, 1835 フタホシミドリナガタムシに似ているが、前胸背板および上翅会合部の黒色帯の幅がより細いこと、前胸腹板突起先端がより幅広になることなどによって区別される。今回記載した両種とも、南西諸島からの近似種の記録はなく、同定は容易である。また、両種とも石灰岩地帯に多く自生するクスノハカエデのスイーピングによって得られており、成虫の後食植物と推察される。

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